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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/524,241

02/10/2005

Tadashi Kuroiwa

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23373 7590 10/20/2008  
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EXAMINER

ELVE, MARIA ALEXANDRA

ART UNIT

PAPER NUMBER

3742

MAIL DATE

DELIVERY MODE

10/20/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/524,241	<b>Applicant(s)</b> KUROIWA ET AL.	
	<b>Examiner</b> M. Alexandra Elve	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 12-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (USPAP 2002/0153361A1) in view of Filgas et al. (USPAP 2003/0160034A1).

Sakamoto et al. discloses:

A laser machining device according to the invention is provided with a laser oscillator for generating a laser beam, a main deflecting galvanometer mirror, an F $\theta$  lens, and a sub deflecting means arranged in an optical path between the laser oscillator and the main deflecting galvanometer mirror. A means for splitting a laser beam is provided, and the sub-deflecting means is inserted into the optical path of one of the split laser beams. At the same time, both the split laser beams are incident from the same main deflecting galvanometer mirror to the F $\theta$  lens, and a numerical aperture in the optical system constituted by the main deflecting galvanometer mirror, the F $\theta$  lens and an object are set to be not more than 0.08.

the laser machining device has:

a first scanner for deflecting a traveling direction of a first laser beam to an arbitrary direction with a mirror;

a second scanner for deflecting traveling directions of a second laser beam and the first laser beam passing through the first scanner to arbitrary directions with mirrors; and

a lens for converging the second laser beam and the, first laser beam passing through the second scanner.

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In addition, the laser machining device has a configuration in which the first laser beam and the second laser beam have different polarization directions, and

a beam splitter which reflects one laser beam and transmits the other laser beam is arranged in front of the second scanner such that the laser beams from the beam splitter are propagated to the second scanner.

The laser machining device further has:

an oscillator;

a diffractive optics for splitting a linearly polarized laser beam oscillated from the oscillator into a first laser beam and a second laser beam; and

a phase plate for changing the polarization direction of the second laser beam.

The laser machining device still further has:

an oscillator; and

a spectral beam splitter for splitting a circularly polarized laser beam oscillated from the oscillator into a first laser beam and a second laser beam having different polarization directions...

Sakamoto et al. does not specifically disclose three polarizers or the use of a deformable mirror.

Filgas et al. discloses a laser system having:

...polarizing, are provided in a plurality of sections ... along the direction of beam propagation...

...Fold mirrors or prisms 416 are used to direct the output...

It would have been obvious to one of ordinary skill in the art at the time of the invention to use multiple polarizers and a fold (deformable) mirror as taught by Filgas et al. in the Sakamoto et al. apparatus because the a third polarizers is merely an addition of multiples and a form mirror allows for more maneuverability. Duplication of parts was held to be obvious. In re Harza 124 USPQ 378.

### ***Response to Arguments***

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See us PTO 892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 7:30-4:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu B. Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

October 14, 2008.

/M. Alexandra Elve/  
Primary Examiner, Art Unit 3742